California Air Resources Board

California Environmental Protection Agency

Staff Report:
Proposed Adoption of the Updated Climate Action Reserve Forest Project Protocol

Planning and Technical Support Division
Emissions Inventory Branch

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State of California
AIR RESOURCES BOARD

STAFF REPORT

PROPOSED ADOPTION OF THE UPDATED CLIMATE ACTION RESERVE FOREST PROJECT PROTOCOL

To be considered by the Air Resources Board September 24-25, 2009, at:

South Coast Air Quality Management District Auditorium
21865 Copley Drive
Diamond Bar, California 91765-4182

Acknowledgements

ARB staff would like to thank the:

Forest Protocol Workgroup members
Climate Action Reserve

September 10, 2009

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Executive Summary

In October 2007, the Air Resources Board (ARB or Board) adopted the California Climate Action Registry forest protocols (sector, project, and certification protocols) as a cohesive and rigorous accounting framework for voluntary purposes. By adopting the forest protocols, the Board recognized the value of the protocols for early participation in forest projects that achieve greenhouse gas emission reductions. The Board also recognized the need to develop additional methods to encourage greater participation in forest projects.

The Board directed ARB staff to initiate a process to update the forest protocol to reduce barriers to participation, especially for public lands and industrial working forests, while still maintaining the sound accounting principles of the protocol. ARB staff contracted with the California Climate Action Registry – now the Climate Action Reserve (the Reserve) – to lead the update process. A Forest Project Protocol Workgroup was formed to identify and work through major issues to update the protocol. The Workgroup consisted of stakeholders representing the forest industry, public lands, non-governmental organizations, government agencies, and academia.

The Reserve staff and the Workgroup made significant improvements to the forest protocol, both reducing barriers to participation and further improving protocol quality and efficiency. Barriers to participation have been removed for private commercial forests not associated with a land trust, private non-timber forests (oak woodlands), public lands, and for small landowners. The update also improves methods for calculating baselines and additionality, better addresses permanence and leakage accounting, improves cost-effectiveness, includes harvested wood products, and more clearly defines natural forest management. Efficiencies were made to both forest inventory and verification requirements where these did not diminish the protocol's rigor.

The forest carbon accounting methods in the updated Forest Project Protocol represent accurate and conservative methods that generate real, additional, permanent, and verifiable forest carbon credits for the voluntary market. The conditions and criteria for the use of protocols in complying with AB 32 are still being developed as part of California's cap-and-trade program regulation.

The Climate Action Reserve Board of Directors adopted the Forest Project Protocol (version 3.0) at their September 1, 2009 meeting. In consideration of the complexity and dynamic nature of carbon accounting protocols, the Reserve Board of Directors understands further updates may occur on technical issues still under review.

The ARB staff is recommending that the Air Resources Board, at their September 24-25, 2009 meeting, adopt the Forest Project Protocol (version 3.0) for use in voluntary forest greenhouse gas reduction projects.

I. Background

In October 2007, the Air Resources Board (ARB or Board) adopted the California Climate Action Registry forest protocols (sector, project, and certification protocols) as a cohesive accounting framework for voluntary purposes. The protocols provide quantification methods that ensure that reductions are real, additional, permanent, and verifiable as required by the Global Warming Solutions Act of 2006 (AB 32). By adopting the forest protocols, the Board recognized the value of the protocols for early participation in forest projects that achieve greenhouse gas emission reductions. The Board also recognized the need to develop additional methods to encourage greater participation in forest projects.

The Board directed ARB staff to initiate a process to develop additional approaches for forest carbon accounting and return to the Board with protocol updates after the process was completed. Specifically, the Board sought to reduce barriers for participation by private commercial forests not associated with a land trust, private non-timber forests (oak woodlands), and public lands, while still maintaining protocol quality. ARB staff contracted with the California Climate Action Registry – now the Climate Action Reserve (the Reserve) – to lead the update process and create a workgroup to develop an update to the Forest protocols. A Forest Project Protocol Workgroup was formed to identify and work through major issues to update the protocol.

The updated Forest Project Protocol is for project accounting for voluntary purposes to generate credits for use in a *voluntary* market. The conditions and criteria for the use of protocols for complying with AB 32 are still being developed as part of California's cap-and-trade program regulation.

II. Key Improvements to the Forest Project Protocol

Based on recommendations from the Protocol Workgroup, the Reserve has updated the Forest Project Protocol to include numerous improvements, which will provide greater opportunities for landowners to participate in forest projects. The key improvements include that the updated protocol:

- Expands applicability for other landowner types, especially public lands and private commercial forests;
- Improves methodologies to calculate baseline emissions;
- Better addresses permanence and replacement of carbon lost from reversals;
- Better leakage accounting;
- Improves cost-effectiveness (less burdensome forest inventory requirements);
- Improves co-benefits (refines definition of "natural forest management" and requires sustainable harvesting practices); and
- Includes harvested wood product accounting

III. The Forest Protocol Workgroup Process

In updating the Forest Project Protocol, the Reserve created a Forest Protocol Workgroup (Workgroup), a group of 28 people, representing large and small private landowners, public landowners, environmental organizations, scientists and academics, state and federal government agencies, and verifiers (participants are listed in Table A-1 in the Appendix). The Workgroup discussions, led by a professional facilitator, were held in all-day sessions at least every 3 weeks from November 2007 through January 2009, and less frequently through July 2009. These sessions were open to the public. In addition, outside speakers were invited to share perspectives and expertise during several of the meetings.

To make efficient use of time and move issues forward, the Workgroup created subcommittees to tackle the details of the following specific issues:

- Improved Forest Management Baseline
- Public Lands Forest Management Baseline
- Reforestation Baseline
- Avoided Conversion Baseline
- Permanence
- Leakage
- Co-Benefits
- Quantification

Subcommittees met and reported back to the broader group for discussion and decisions. Subcommittee leads are listed in Table A-2 in the Appendix.

IV. Updated Forest Project Protocol: Areas of Improvement

The process to update the Forest Project Protocol provided an opportunity to make numerous improvements to the previous protocol, including updates to methods to better address baseline calculations, address permanence and leakage; improve guidance for calculations; reflect current science; and improve the efficiency and cost-effectiveness of methods. Specific areas of improvement are listed below and discussed in more detail in this report:

- *Baseline and additionality*
  - Revised and improved methodologies for calculating baselines and additionality for all project types
- *Permanence*
  - Mechanisms established to replace all carbon lost in reversals enforced through a project implementation agreement (PIA)

- *Leakage*
  - Standardized discount factors developed for significant risks of emission leakage for all project types
- *Co-benefits*
  - Definition of natural forest management clarified
  - Requirement to demonstrate sustainable harvesting practices
- *Harvested Wood Products*
  - Wood product accounting now included for all project types
- *Monitoring and Verification*
  - Annual monitoring reports required
  - Less burdensome forest inventory requirements
  - Verification with site visits required every six years
- *Applicability*
  - Protocol can now be applied to projects throughout the US, including projects on public lands and oak woodlands

A. Baseline and Additionality

Baselines establish the "business-as-usual" scenario against which to compare forest project activity. This makes it possible to quantify additional emissions reductions or enhanced sequestration resulting from project activity. Correctly establishing a baseline is important to ensure that only emission reductions beyond what would have occurred in absence of the project are credited. The baseline should result in reductions that err on the conservative side, in other words, they should underestimate project emission reductions (additionality) rather than overestimate them.

Baselines described in the protocol vary first by project type – improved forest management, avoided conversion, and reforestation – and within that by land ownership classification (public or private).

1. Improved Forest Management Baseline - Private Lands

Improved forest management projects allow forest owners to be credited for emission reductions or removals that result from forest practices that go beyond what is expected to occur under the baseline scenario. The current version of the protocol (version 2.1) uses California forestry regulations as a reference to model the baseline scenario. The updated protocol expands upon this by also taking into account common forestry practice in establishing a baseline.

Current Method:

The approach to baseline modeling in the current protocol uses the "maximum legally allowable harvest" under the California Forest Practice Rules Option C. This provides a standardized approach for forest project proponents to model forest harvest and growth for 100 years and to establish the project baseline. The baseline is not

averaged, but represents the expected trend of forest management activity over time. Project activity above this baseline is considered additional, and reductions are calculated based on the difference between the project activity and the baseline.

However, these baseline assumptions may not be appropriate for a large proportion of forest timberland acreage because the legal requirements for larger landowners are more restrictive than Option C, including a requirement for "sustained yield," and requiring different management projections. Though Option C provides the benefit of a standardized approach, it does not necessarily represent common practice.

New Approach:

The updated baseline approach takes into account the forest entity's legal and financial constraints, and uses the average of the actual forest management practices in the project's assessment area. The assessment area is defined as a geographical area consisting of distinct forest community types within regulatory and political boundaries that affect forest management as represented in the US Forest Service forest inventory and analysis plots (FIA).

To calculate the new baseline, the proponent's legal and financial constraints are projected over 100 years. For example, the requirements of the Forest Practice Rules, based on an entity's budget, establish a 100-year projection of growth and harvest activity. The projection is averaged over the 100-year period to create a flat line. Constraints are placed on the projection, however, depending on how a project's initial carbon stocks compare to average carbon stocks in the project's assessment area. If initial stocks are above the regional average, then the projected 100-year baseline may not fall below the average (even where legally this might be permitted). This allows projects to receive credit for maintaining above-average stocking levels, but only to the extent they exceed common practice, not a legally permissible minimum. If initial carbon stocks are below average, then the projected 100-year baseline may not fall below the initial stocking level. There is also a requirement for an historic review of stocks that prevents the practice of reducing stocks just prior to starting a project. In all cases, credits are issued annually based on the increase in stored carbon (both in the project area and in harvested wood products) relative to the baseline scenario. If stored carbon decreases in a given year, then it is treated as a reversal that must be compensated for by the project proponent.

2. Improved Forest Management Baseline - Public Lands

Roughly half of the State's 34 million acres of forest land is public land. The current protocol is not applicable to public lands, which creates an insurmountable barrier to participation by a vast acreage of the State. The Board directed staff, during the protocol adoption hearing, to update protocol with methodologies appropriate to public lands.

Current Method:

The current protocol does not include a public lands forest management baseline.

New Approach:

The updated protocol includes a new baseline approach that allows public lands to quantify a baseline based on an historic, 10-year review of retention standards, rotations, and other practices determined by a public entity's statute, regulation, policy, and budgets. For project areas with declining stocks, the baseline is the 10-year average, projected as a flat line for the next 100 years. For projects with increasing stocks, the baseline is the increasing growth trajectory over the next 100 years.

In general, any project developed on public lands requires approval from the appropriate government agency and must include a public vetting process. Projects on federal lands are required to be approved through a federal legislative or regulatory/rulemaking process.

3. Reforestation Baseline – Public and Private Lands

Extensive reforestation opportunities exist in California. Reforestation projects on public and private lands, from oak woodlands to timberlands could significantly enhance forest sequestration capacity.

Current Method:

The current Protocol allows reforestation projects only if they occur on currently non-forested land which has been non-forested for at least 10 years, but has historically supported forest cover. Afforestation projects, planting trees where historically trees have not grown naturally, are not allowed.

New Approach:

The updated Protocol still requires reforestation projects to be out of forest cover for 10 years; however the requirement is waived if the project land base has undergone a significant natural disturbance and the landowner is not required by law to reforest. An example of a newly eligible project type is Cuyamaca State Park, which experienced an exceptionally hot, catastrophic fire in 2003 that sterilized the soils

and prevented natural regeneration. Reforestation is not required by law, but will stabilize the barren slopes against erosion, recondition soils, and begin to return forest ecosystem function to the landscape.

To ensure additionality, an economic evaluation of the project is required to determine that reforestation activity would not have otherwise happened. The baseline is the simulated future characterization of carbon stocks assuming there is no tree planting or removal of barriers to natural regeneration. Reforestation projects on lands that have recently experienced timber harvesting are not eligible; however, projects on active timberlands would be eligible if a significant natural disturbance as described previously were to occur.

4. Avoided Conversion Baseline

Deforestation, degradation, and conversion of forested land to non-forest uses is one of the largest sources of GHG emissions in the world, accounting for roughly 20% of current global emissions. As California's population increases, and as the development value of forest land rises, there is increased pressure to convert forest land to non-forest uses. This development pressure is felt in the oak woodlands as well as in timber lands.

Current Method:

Projects that seek to protect forest land from conversion must demonstrate a site-specific immediate threat such as a current development plan or demonstrate conversion risk using county-specific conversion rate look-up tables.

New Approach:

The baseline projection for Avoided Conversion Projects involves two steps:

- Characterizing and projecting the baseline
- Discount for the uncertainty of conversion probability

The baseline is forecast over the 100-year timeframe based on an appraisal of the highest value land use, and the consequent rate of conversion of onsite carbon stocks. Avoided conversion projects must demonstrate that an alternative land use is legally permissible, and demonstrate through a real estate appraisal that the area is suitable for conversion and that the alternative land use has a significantly higher market value.

Conversion rates are estimated either from referencing planning documents, or from use of a default look-up table provided in the protocol. If the latter method is used, then a discount is applied based on the uncertainty of conversion for a given land type.

B. Permanence

Carbon sequestration projects face a large variety of risks that may compromise the permanence of achieved or transacted reductions and/or may lead to increased leakage (i.e., displacement of GHG emissions outside the project boundary). Permanence is an offset criteria that is generally required in most offset programs, and is required by AB 32.

Permanence refers to the duration of an emission reduction, and is defined relative to the residence time of an emitted GHG in the atmosphere. Permanence for carbon dioxide is defined by the Reserve as a period of 100 years. Emissions from disturbances – such as fire, insects and disease – and from project mismanagement or failure, can return stored carbon to the atmosphere (reversal). The possibility of reversal imposes a risk to the permanence of reductions from sequestration projects. For this reason, the Protocol invokes mechanisms to ensure replacement of lost carbon in the event of a reversal. Permanence can be addressed through both *ex ante* (up-front commitment) and *ex post facto* (commitment to replace lost carbon in the case of a loss) legal instruments.

The current Protocol uses a single *ex ante* legal instrument, a conservation easement requirement, as a mechanism to ensure permanence. A conservation easement reduces certain types of reversal risks, such as conversion risk, but not all, for example wildfire. The "in perpetuity" clause of the conservation easement obligation was a barrier to participation by many private landowners. Because stored forest carbon can be released back to the atmosphere through various processes, such as fire, insects and disease, permanence of transacted tons is only achieved by guaranteeing replacement of lost tons. In practice, forest project proponents have negotiated *ex post facto* obligations outside the scope of the forest protocol. –

The updated Protocol addresses permanence through four separate requirements:

- The requirement to monitor onsite carbon stocks, submit annual monitoring reports, and submit to annual third-party verification of those reports along with periodic verifier site visits;
- The requirement to sign a Project Implementation Agreement (PIA) with the Reserve, which obligates Forest Owners to retire reductions (Climate Reserve Tonnes or CRTs) to compensate for reversals of GHG reductions and removals; and
- The maintenance of a Buffer Pool to provide insurance against reversals of GHG reductions and removals due to unavoidable causes (including natural disturbances such a fires, pest infestations, or disease outbreaks).
- For Avoided Conversion projects, the requirement to obtain a conservation easement or transfer lands to public ownership.

These requirements are discussed below.

1. Monitoring and Verification Requirements

Protocol updates now require the project developer to monitor onsite carbon stocks, submit annual monitoring reports, and submit to annual third-party verification of those reports. Any reversals of stored carbon must be quantified and reported in the annual monitoring reports. Forest owners are required to notify the Reserve when any reversals occur, and verification of onsite carbon stocks must take place following a reversal.

2. Project Implementation Agreement

To be eligible, a forest owner is required to enter into a Project Implementation Agreement (PIA) with the Reserve. The PIA is an agreement between the Reserve and a landowner setting forth: (i) the landowner's obligation (and the obligation of succeeding landowners) to comply with the Forest Project Protocol for the 100-year period that defines permanence, and (ii) the rights and remedies of the Reserve in the event of any failure of a landowner to comply with their obligations. The PIA must be signed when the project is registered with the Reserve.

Remedies for unintentional and intentional reversals, including early project termination, are detailed in the PIA and in the protocol. A reversal is defined in the protocol as a decline in the difference between the project and the baseline carbon stock in one year. In the updated protocol, an avoidable reversal is defined as a reversal that results from the forest owner's negligence or willful intent (such as harvesting), while an unavoidable reversal is the result of natural causes such as wildfire or disease. In general, a forest owner is liable for avoidable reversals, while the Reserve will compensate for unavoidable reversals through the Buffer Pool mechanism.

3. Project risk assessment and the Buffer Pool

The Buffer Pool acts as a general insurance mechanism against unavoidable reversals for all Forest Projects registered with the Reserve. The Buffer Pool is a holding account for Forest Project CRTs, and is administered by the Reserve. All Forest Projects must contribute a percentage of CRTs to the Buffer Pool determined by a project-specific risk rating. For example, a project that has qualified conservation easement or deed restriction in place is considered lower risk and therefore is required to contribute less to the Buffer Pool than a project that does not have one. If a Forest Project experiences an unavoidable reversal of GHG reductions and removals, the Reserve will retire a number of CRTs from the Buffer Pool equal to the total amount of carbon that was reversed (measured in metric tonnes of CO2-equivalent).

In the event of an avoidable reversal, including harvesting, development, and early project termination, the forest owner is required to replace obligated CRTs with forest CRTs either from their own account or from the Reserve. Compensation rates are project- and timing-specific, and are detailed in the protocol. It is possible for projects to temporarily decrease carbon storage due to planned harvesting or thinning cycles (normal silviculture cycles), while continuing to increase carbon storage over time. Planned thinning that results in a decrease in the difference between actual and baseline carbon storage is treated as an avoidable reversal that requires compensation in the year it occurs; however, this would not affect the project's ability to credit reductions in future years (provided all reversals have been compensated for).

The protocol requires that actual standing live carbon stocks cannot fall below baseline carbon stocks. If a reversal lowers actual onsite carbon stocks below its approved baseline carbon stocks, the project will automatically be terminated by the Reserve. If this was the result of an unavoidable reversal, the Reserve would compensate for the lost carbon from the buffer pool; if the result of an avoidable reversal, the forest owner would be required to compensate.

4. Avoided Conversion

An additional requirement exists to ensure that forest lands protected through avoided conversion projects are not converted at a later time and are dedicated to continuous forest cover in perpetuity. In Version 2.1., the conservation easement required applied to avoided conversion projects in the same manner as other project types. In Version 3.0, avoided conversion projects are required to obtain either a conservation easement or transfer to public ownership. The option for public ownership reduces a barrier to participation for public agencies.

C. Leakage

Leakage occurs when a project displaces business-as-usual activities from within the project boundary to another location outside the project boundary, which can reduce or negate the overall net GHG benefit. In forest projects, leakage could include increased harvesting outside the project boundary in the case of a forest management project, or displaced conversion of forest land to a different site in the case of an avoided conversion project. Reforestation projects could also result in leakage if the reforestation displaces other land uses such as grazing or agricultural land.

Current Method: Carbon accounting on all of a forest owner's lands is required to monitor carbon stocks for leakage outside the project boundary, including discontiguous properties, as detailed in the Reserve's "Forest Sector" Protocol. The Forest Sector Protocol details requirements for reporting carbon stocks from all an entity's lands, not just those within

the project area. This is expensive and time-consuming, and has been a significant barrier to large landowners. Leakage risk is not limited to a single forest entity, and leakage outside the forest entity boundary is not addressed in Version 2.1.

New Approach: The Forest Sector Protocol has been replaced by a rigorous leakage risk assessment to determine risk of shifting project emissions elsewhere. Reforestation projects, for example, must consider the potential for shifting land use effects when projects take place on land used for grazing or agriculture. Improved forest management projects must consider market leakage impacts where reducing harvesting on project lands may lead to an increase in harvesting elsewhere. Avoided conversion projects must apply a leakage discount based on the risk that other forest lands may be converted.

Each project type has its own worksheet that assesses the risk of leakage annually, both within the property and outside of the property, and provides a corresponding leakage risk penalty. The penalty is deducted from the calculations of net emission reductions. Leakage risk discounts are applied using standard default factors depending on the project type and the type of leakage risk. For example, improved forest management projects have a default leakage risk of 20%, where each ton of reduced harvesting below baseline levels is expected to result in a 0.2 ton increase in harvesting outside the project area.

D. Improvement of Co-Benefits Terms

The updated Protocol has added the requirement that projects, in addition to creating climate benefits, also improve or sustain natural ecosystem processes. Projects must demonstrate environmentally responsible, long-term, sustainable forest management certified by a nationally recognized program or approved by a state or federal agency, or they must use uneven-aged management practices as defined in the protocol. Standing live carbon stocks in the project area are now are required to be maintained or increased over the life of the project.

The requirement for “native” forest species is better defined in the updated Protocol as being in reference to a scientifically-accepted State-wide native species authority. In California, the native-species reference is the Jepson Manual, and includes a database managed and updated by the University of California (The Jepson Manual Project). Where supported by scientific peer-reviewed research, planting native species outside their current distribution is allowed as a climate adaptation strategy, but must be done in concert with a state or federally approved adaptation plan, or a local plan that has the support of the appropriate state or federal forestry authority.

"Natural forest management" is also better defined to include a spatial scale for management activities. The management of the diverse age classes must ensure that the forest can support all endemic plant and wildlife species and does not preclude even-age management, provided the project includes multiple age classes and mixed species at a watershed scale. Furthermore, it includes a requirement to: maintain or increase live tree biomass, manage for diversity of native species, manage for diversity of age classes to support functioning habitat, and manage to conserve structural elements (snags). The updated protocol contains an evaluation criteria worksheet to determine if the project meets the definition of natural forest management, and specifies what ramifications or corrective actions must be taken if these requirements are not met.

E. Harvested Wood Products

Harvested wood products can represent a significant pool of forest carbon. Wood products have been omitted from most forest accounting frameworks because of the concerns that crediting carbon stored in harvested wood could incentivize harvesting and because of complicated policy issues around chain-of-custody accounting and carbon ownership. When designing an approach, the Workgroup followed the principles of accurate accounting and conservative crediting.

Current Method: In the current Protocol, carbon stored in wood products is considered an optional carbon pool and is not required to be reported. Harvesting activity is reported as a loss of carbon stock and is thus calculated as an immediate emission. This simplifies accounting, however, it is not a quantitatively accurate representation of what actually happens to sequestered/harvested carbon. In the course of its life cycle, harvested biomass can provide long-term carbon storage in durable wood products. It can also provide substitution benefits as biofeedstock to offset fossil fuel emissions, and provide an alternative to more energy-intensive construction materials in the building industry; however, these benefits are more indirect and are not currently evaluated in either version of the forest protocol.

The current approach also is not necessarily conservative; including harvested wood products may either increase or decrease the net reductions depending on whether the project increases or decreases harvesting relative to the baseline scenario. If baseline harvesting levels were higher than under the project activity, including wood products would result in a lower estimate of reductions relative to the baseline.

New Approach: Accounting methodologies were added for harvested wood products as a required element for both the baseline and project activity calculations for all project types. The guiding principles for developing an accounting method for harvested carbon included 1) the

need for accurate and conservative assessment of the climate benefits of forest management activities, 2) recognition that the forest sector is responsible for the activities which lead to the initial sequestration of carbon, and that 3) quantification needs to be technically sound.

Harvested wood products were considered by the Workgroup to be a significant carbon pool that should be included in order to have more complete accounting of relevant sources and sinks. Because the updated protocol requires onsite carbon stocks to increase over time, the inclusion of wood products will not result in project developers being rewarded for increased harvesting at the expense of onsite carbon storage. Also, because carbon storage in wood products is discounted to reflect average carbon stored in long-term wood products over 100 years, increased onsite carbon storage in forest stocks will always result in greater crediting than increased wood product production.

The Department of Energy 1605(b) [1605(b)] method for harvested wood product accounting was chosen by the Forest Protocol Workgroup because of its international acceptance, national application, and comprehensive approach. 1605(b) tables specify national statistics of wood-product end-use in various carbon pools through the wood product life-cycle. There are two primary long-term storage pools for harvested wood product carbon – long-term wood products and landfills. This approach was tailored to the forest protocol to estimate the percentage of a project's wood products that remain in long-term end-use and landfill pools after 100 years (defined by the Reserve as "permanent"). All other pools lead to short-term wood products and are calculated as immediate CO2 emissions.

The updated protocol requires that carbon in long-term wood products be accounted for in all project types. Accounting for carbon storage from wood products in landfills is handled differently to reflect uncertainties in quantifying landfill carbon storage and complications of cross-sector crediting. For these reasons, the updated protocol does not account for or credit increasing wood product storage in landfills. However, when wood product storage in landfills is expected to decrease as a result of decreased harvesting, the reduced carbon storage in landfills is estimated and accounted for. This is included as a conservative approach to ensure net reductions are not over-estimated.

F. Monitoring and Verification

Accompanying the updated Forest Project Protocol is a revised Forest Project Verification Protocol. Forest owners are required to submit annual monitoring reports including the updated forest carbon inventory, annual harvest volumes, and other information. All reports that reference carbon stocks must be submitted with the oversight of a professional forester. The forest

inventory must have been completed within the last 12 years, and in general, plots used in the forest inventory must be sampled at least every 12 years.

Verification is required before any credits will be issued by the Reserve. Verification requires a site visit at least every six years, but may be based on a desk review of the annual monitoring report in interim years. The verification protocol provides guidelines to verifiers about how to assess and independently verify the data reported in the annual monitoring reports which is used as the basis for issuing CRTs. The verification protocol is used a supplement to the Reserve's Verification Program Manual, available at http://www.climateactionreserve.org/how-it-works/program/program-manual/. All verifiers must be accredited by the Reserve to verify forest-sector projects.

The Board previously adopted the Forest Verification Protocol Version 2.0 in October 2007. The updated Forest Project Verification Protocol reflects the significant updates that have been made to the Forest Project Protocol and the change that entity-level reporting in the forest sector is no longer required.

G. Applicability

The updated forest protocol was developed for use in California, though the language and methodologies were designed to be general enough to apply to projects outside of California. The Reserve Board adopted the forest protocol for use anywhere in the Unites States. However, before projects can be developed outside California, the Reserve will need to approve common practice forest stocking data and appropriate growth models for use in other states and regions. Because the updated protocol relies on US-specific data sets, projects outside the country are not currently eligible.

Reducing barriers to participation for public lands was one of the key areas of improvement the Board directed the Workgroup to address. The updated protocol also now allows for reforestation and improved forest management projects to be developed on public lands. Avoided conversion projects that involve a transfer of land from private to public ownership are also eligible.

Barriers to participation for private working forests have also been reduced in the updated protocols. Conservation easements are no longer required for reforestation and improved forest management projects, with permanence now ensured through the Project Implementation Agreement. The updated protocol also contains less burdensome forest inventory requirements and removes the requirement to inventory a forest owner's lands outside of the project area.

Oak woodland land managers have been concerned that the forest protocols do not apply to oak woodlands because woodlands, while they can be managed for forest improvement, are very different than timberlands. The

protocols as they exist are appropriate for oak woodlands. Woodlands should incorporate the baseline approaches as described appropriate for their needs.

V. Projects Using the Previous CCAR Forest Protocol (Ver. 2.1)

The Board and the Reserve continue to fully support projects registered under the previous version of the Forest Project Protocol (Version 2.1, September 2007) and believe that those projects will continue to achieve real emission reductions quantified using rigorous accounting methods into the future The forest protocol represents a sound and rigorous approach to quantifying the benefits of voluntary forestry projects. For purposes of generating credits for the voluntary market, projects that are registered under the previous protocols will continue to be verified under the protocol in place at the time the project was registered for the life of the project. New projects will be accepted for registration under the previous protocols for a period of up to three months after the updated protocol is adopted by the Climate Action Reserve's Board of Directors. Project proponents using older versions of the protocol have the option to switch to the updated protocol.

VI. Public Comments

The Reserve and ARB held joint public workshops over the course of the protocol update process. Workshops were held in July 2008, December 2008, February 2009 and April 2009. In addition, the Reserve Board listened to public comments at their July 1, 2009 Board meeting.

Public comments were solicited for the project protocol update, for the harvested wood products approach, and for the Project Implementation Agreement. The Reserve responded to comments on the Forest Project Protocol and posted them on the Reserve website at:
http://www.climateactionreserve.org/how-it-works/protocols/adopted-protocols/forest/forest-project-protocol-update/

VII. Conclusion

The proposed updated Forest Project Protocol (version 3.0) has achieved the goals as set forth by the Board resolution in October 2007. Barriers to participation have been addressed for private commercial forests not associated with a land trust, private non-timber forests (oak woodlands), and for public lands. The proposed updates further improve protocol quality and efficiency by also updating the accounting methods to reflect current science, improving guidance for calculations, better addressing risk factors associated with leakage and permanence, improving the baselines associated with each of the project types, and clarifying co-benefits terms. Finally, the updated protocol is the first forest protocol internationally to include harvested wood product accounting and crediting. The methods represent accurate and conservative accounting, which

generate real, additional, permanent, and verifiable forest carbon reduction credits for voluntary markets.

Staff recommends the Board adopt the Forest Project Protocol (version 3.0) for use in voluntary markets.

Appendix

Table A - 1.
Forest Protocol Work Group Members

Connie Best	The Pacific Forest Trust
Dave Bischel	California Forestry Association
Louis Blumberg	The Nature Conservancy
Steve Brink	California Forestry Association
Ann Chan	The Pacific Forest Trust
Anton Chiono	The Pacific Forest Trust
Florence Daviet	World Resources International
George Gentry	California Board of Forestry
Bruce Goines	United States Forest Service
Katie Goslee	Winrock International
Greg Giusti	University of California Extension (Facilitator)
Caryl Hart	California State Parks
Eric Holst	Environmental Defense Fund
Robert Hrubes	Scientific Certification Systems
Nick Martin	Winrock International
Ed Murphy	Sierra Pacific Industries
Mark Nechodom	United States Forest Service
John Nickerson	Climate Action reserve (Workgroup Lead)
Jeanne Panek	California Air Resources Board
Michelle Passero	The Nature Conservancy
Tim Pearson	Winrock International
Tim Robards	California Department of Forestry and Fire Protection
Emily Russell Roy	The Pacific Forest Trust
Bob Rynearson	WM Beaty and Associates
Gary Rynearson	Green Diamond Resources
Jayant Sathaye	University of California, Berkeley
Kimberly Todd	United States Environmental Protection Agency
Doug Wickizer	California Department of Forestry and Fire Protection

Table A - 2. Subcommittee Topics and Leads

Subcommittee	Lead
Improved Forest Management Baseline	Eric Holst, Environmental Defense Fund
Public Lands Forest Management Baseline	Bruce Goines, US Forest Service
Reforestation Baseline	Doug Wickizer, CAL FIRE
Avoided Conversion Baseline	Michelle Passero, The Nature Conservancy
Permanence	Ed Murphy, Sierra Pacific Industries
Leakage	Katie Goslee, Winrock
Co-Benefits	Robert Hrubes, Scientific Certification Systems
Quantification	Tim Robards, CAL FIRE